ELSEVIER

Applied Surface Science 212–213 (2003) vii–xv

applied surface science

www.elsevier.com/locate/apsusc

Contents

In memoriam 1

Acknowledgments 2

Preface 3

I. Structural, Electronic, Magnetic and Optical Properties of Thin Films and Surface

Passivation of metal carbide surfaces: relevance to carbon nanotube–metal interconnections
H. Oudghiri-Hassani, E. Zahidi, M. Siaj, J. Wang and P.H. McBreen 4

Surface states resonance on In-terminated InAs(0 0 1)4 × 2-c(8 × 2) clean surface
P. De Padova, P. Perfetti, C. Quaresima, C. Richter, M. Zerrouki, O. Heckmann, V. Ilakovac and K. Hricovini 10

Atomic structure and magnetic properties of Mn on InAs(1 0 0)
K. Hricovini, P. De Padova, C. Quaresima, P. Perfetti, R. Brochier, C. Richter, V. Ilakovac, O. Heckmann, L. Lechevallier, P. Bencok, P. Le Fevre and C. Teodorescu 17

Effect of end-substitution of hexyl chains on the growth and electrical properties of quaterthiophene thin films
J. Ackermann, C. Videlot, P. Raynal, A. El Kassmi and P. Dumas 26

Interplay between surface and electronic structures in epitaxial Ag ultra thin films on Cu(111)
A. Bendounan, H. Cercellier, Y. Fagot-Revurat, B. Kierren, V. Yu Yurov and D. Malterre 33

Thermo-coloration of SmS thin flims by XPS in situ observation
Y. Mori, S. Tanemura, S. Koide, Y. Senzaki, P. Jin, K. Kaneko, A. Terai and N. Nabotova-Gabin 38

Structural transitions at the surface of the decagonal quasicrystal Al–Co–Ni
T. Flückiger, T. Michlmayr, C. Biely, R. Lüscher and M. Erbudak 43

Potassium assembled on the InAs(1 1 0) surface: from nanowires to two-dimensional layers
L. Gavioli, M. Padovani, E. Spiller, M. Sancrotti and M.G. Betti 47

Temperature-dependent interaction of C_{60} with Ge(1 1 1)-c(2 × 8)
G. Bertoni, C. Cepek and M. Sancrotti 52

Molecular orientation of C_{60} on Pt(111) determined by X-ray photoelectron diffraction
L. Giovanelli, C. Cepek, L. Floreano, E. Magnano, M. Sancrotti, R. Gotter, A. Morgante, A. Verdini, A. Pesci, L. Ferrari and M. Pedio 57

Matrix element effects on the Fermi surface mapping by angle resolved photoemission from $Bi_2Sr_2CaCu_2O_{8+x}$ superconductors
L. Roca, M. Izquierdo, A. Tejeda, G.D. Gu, J. Avila and M.C. Asensio 62

Shadow bands at the Fermi surface of $Bi_2Sr_2CaCu_2O_{8+x}$ superconductors: structural or antiferromagnetic origin?
M. Izquierdo, L. Roca, D.G. Gu, J. Avila and M.C. Asensio 67

Direct observation of localized unoccupied states by synchrotron radiation two-color resonant photoemission
H.L. Hsiao, A.B. Yang and H.L. Hwang 73

Surface particularities in pulsed laser ablation/deposition of the ferromagnetic alloy NiMnSb
C.E.A. Grigorescu, S.A. Manea, M. Mitrea, O. Monnereau, R. Notonier, L. Tortet, R. Keschawarz, J. Giapintzakis, A. Klini, V. Zorba, J. Androulakis and C. Fotakis 78

Structure properties of nanostructured Fe films grown on $c(2 \times 2)$ N/Cu(1 0 0) self-organised surface
P. Finetti, F. Borgatti, R. Felici, R. Gunnella and S. D'Addato 85

Surface fracture of glassy materials as detected by *real-time* atomic force microscopy (AFM) experiments
F. Célarié, S. Prades, D. Bonamy, A. Dickelé, E. Bouchaud, C. Guillot and C. Marlière 92

Surface XPS core-level shifts of FeS_2
S. Mattila, J.A. Leiro and K. Laajalehto 97

Atomic and electronic structures of heteroepitaxial C_{60} film grown on Ni(1 1 1), Cu(1 1 1)
M. Kiguchi, K.-i. Iizumi, K. Saiki and A. Koma 101

STM and STS on single dopants and Au-induced chains at the Si(1 1 1) surface
C. Sürgers, M. Schöck, T. Trappmann and H. v. Löhneysen 105

Investigations of $Cd_{1-x}Mn_xTe$ crystals by means of ellipsometry and Auger electron spectroscopy
A.A. Wronkowska, A. Wronkowski, A. Bukaluk, M. Stefański, H. Arwin, F. Firszt, S. Łęgowski, H. Męczyńska and K. Hradil 110

Expression of the optical constants of chalcogenide thin films using the new parameterization dispersion model
D. Franta, I. Ohlídal, M. Frumar and J. Jedelský 116

Luminescent properties of single quantum well of CdTe on ZnTe grown by hot-wall epitaxy
Y. Yoneyama, H. Kuwabara and H. Tatsuoka 122

Optical manifestation of magnetoexcitons in near-surface quantum wells
B. Flores-Desirena and F. Pérez-Rodríguez 127

Sb/Si(1 1 0) 2×3—a photoelectron diffraction study
M. Schürmann, S. Dreiner, U. Berges and C. Westphal 131

Atomic structure and formation process of the Si(1 1 1)–Sb($\sqrt{7} \times \sqrt{7}$) surface phase
D. Gruznev, B.V. Rao, Y. Furukawa, M. Mori, T. Tambo, V.G. Lifshits and C. Tatsuyama 135

Spectroscopic multiple angle reflection and transmission ellipsometry of aggregated gold films
V.-V. Truong, R. Belley, G. Bader and A. Haché 140

Structure of Ga-stabilized GaAs(0 0 1) surfaces at high temperatures
A. Ohtake, S. Tsukamoto, M. Pristovsek and N. Koguchi 146

Study of the (0 0 1) cleavage planes of guanidinium methanesulfonate single crystals by AFM and He diffraction
G. Bracco, Y. Hu, J. Acker and M.D. Ward 151

Inelastic electron analysis in reflection high-energy electron diffraction condition
H. Nakahara, T. Hishida and A. Ichimiya 157

Emission of lights of various colors from p-CdS:Cu/n-CdS thin-film diodes
Y. Kashiwaba, J. Sato and T. Abe 162

Thermal magnetic properties of Fe films on Cu_3Au investigated by magneto optical Kerr effect
F. Bisio, G. Gonella, M. Canepa, S. Terreni and L. Mattera 166

Interdiffusion and magnetism in Ni/Cu multilayers
A. Meunier, B. Gilles and M. Verdier 171

II. Thin Films Growth Epitaxy and Roughening

Vapor phase techniques for the fabrication of homoepitaxial layers of silicon carbide: process modeling and characterization
M. Pons, F. Baillet, E. Blanquet, E. Pernot, R. Madar, D. Chaussende, M. Mermoux, L. Di Coccio, P. Ferret, G. Feuillet, C. Faure and Th. Billon 177

Control in the initial growth stage of heteroepitaxial $Si_{1-x-y}Ge_xC_y$ on Si(0 0 1) substrates
S. Zaima, A. Sakai and Y. Yasuda 184

Si epitaxial growth on SiH_3CH_3 reacted Ge(1 0 0) and intermixing between Si and Ge during heat treatment
K. Takahashi, M. Fujiu, M. Sakuraba and J. Murota 193

Si atomic layer-by-layer epitaxial growth process using alternate exposure of Si(1 0 0) to SiH_4 and to Ar plasma
M. Sakuraba, D. Muto, T. Seino and J. Murota 197

Investigation of interface roughness and roughness correlation in solid-state multilayer by coplanar diffuse X-ray scattering
I. Busch and J. Stümpel 201

Effects of As^+-implantation on the formation of iron silicides in Fe thin films on (1 1 1)Si
H.T. Lu, Y.L. Chueh, L.J. Chou and L.J. Chen 204

Work function of impurity-doped polycrystalline $Si_{1-x-y}Ge_xC_y$ film deposited by ultraclean low-pressure CVD
H. Shim, M. Sakuraba, T. Tsuchiya and J. Murota 209

Ag island nucleation on Ge(1 1 1)-c(2 × 8)
M. Padovani, E. Magnano, G. Bertoni, V. Spreafico, L. Gavioli and M. Sancrotti 213

Si(1 1 1) step fluctuations in reflection electron microscopy at 1100 °C: anomalous step–step repulsion
R.D. Schroll, S.D. Cohen, T.L. Einstein, J.-J. Métois, H. Gebremariam, H.L. Richards and E.D. Williams 219

Mg deposition on Ag(1 0 0): temperature evolution of the structural and electronic properties
R. Moroni, F. Bisio and L. Mattera 224

Some evidences of ordering in InGaP layers grown by liquid phase epitaxy
T.A. Prutskij, P. Díaz-Arencibia, A. Mintairov, J. Merz and T. Kosel 230

The growth of silver films on Si(1 1 1)-(7 × 7) studied by using photoelectron diffraction
V. Pérez-Dieste, J.F. Sanchez, M. Izquierdo, L. Roca, J. Avila and M.C. Asensio 235

Equilibrium surface segregation enthalpy of Ge in concentrated amorphous SiGe alloys
J. Nyéki, C. Girardeaux, G. Erdélyi, A. Rolland and J. Bernardini 244

Surface electromigration of In-covered Si high-index surfaces
K. Sakamoto, Y. Matsubayashi, M. Shimada, T. Yamada, A. Natori and H. Yasunaga 249

Preparation and characterization of polycrystalline anatase and rutile TiO_2 thin films by rf magnetron sputtering
L. Miao, P. Jin, K. Kaneko, A. Terai, N. Nabatova-Gabain and S. Tanemura 255

An XPD and LEED study of highly strained ultrathin Ni films on Pd(1 0 0)
M. Petukhov, G.A. Rizzi, M. Sambi and G. Granozzi 264

Growth of $Zn_{1-x}Mn_xTe$ films on GaAs(1 0 0) by hot-wall epitaxy
H. Kuwabara, R. Sakamoto, H. Tatsuoka and Y. Nakanishi 267

Electrolytic co-deposition of a nickel/fluorographite composite layer on polycrystalline copper
F. Plumier, E. Chassaing, G. Terwagne, J. Delhalle and Z. Mekhalif 271

Fabrication and characterization of metal and semiconductor SmS thin films by rf/dc dual magnetron sputtering
S. Tanemura, S. Koide, Y. Senzaki, L. Miao, H. Hirai, Y. Mori, P. Jin, K. Kaneko, A. Terai and N. Nabatova-Gabain 279

Growth of high quality silicon carbide films by bias enhanced low-pressure HFCVD using methane
V.C. George, A. Das, M. Roy, A.K. Dua, P. Raj and D.R.T. Zahn 287

Growth and dissolution kinetics of Au/Pb(1 1 1): an AES-LEED study
H. Oughaddou, C. Léandri, B. Aufray, C. Girardeaux, J. Bernardini, G. Le Lay, J.P. Bibérian and N. Barrett 291

Superlattices of self-assembled Ge/Si(0 0 1) quantum dots
V. Le Thanh and V. Yam 296

Zinc sulfide thin films deposited by RF reactive sputtering for photovoltaic applications
L.-X. Shao, K.-H. Chang and H.-L. Hwang 305

III. Nanostructures, Nanotechnologies and Molecular Electronics

III–V nanoelectronics and related surface/interface issues
H. Hasegawa 311

STM investigation of epitaxial Si growth for the fabrication of a Si-based quantum computer
L. Oberbeck, T. Hallam, N.J. Curson, M.Y. Simmons and R.G. Clark 319

Structural evolution in Ge^+ implantation amorphous Si
J.H. He, W.W. Wu, H.H. Lin, S.L. Cheng, Y.L. Chueh, L.J. Chou and L.J. Chen 325

Adsorption and decomposition of *t*-butylphosphine (TBP) on an InP(0 0 1)–(2 × 4)/*c*(2 × 8) surface studied by STM, TPD, and HREELS
Y. Fukuda, T. Kobayashi, T. Shirai, N. Kadotani and M. Shimomura 329

Ga-induced nano-facet formation on Si(1 1 *n*) surfaces
H. Nakahara, H. Suzuki, S. Miyata and A. Ichimiya 334

Auto-correlation function analysis of crystallization in amorphous SiGe thin films
T.F. Chiang, W.W. Wu, S.L. Cheng, H.H. Lin, S.W. Lee and L.J. Chen 339

He diffraction study of the time decay of ripple structures on ion bombarded Ag(1 1 0)
L. Pedemonte, G. Bracco, C. Boragno, F. Buatier de Mongeot and U. Valbusa 344

Synthesis and laser processing of ZnO nanocrystalline thin films
I. Ozerov, D. Nelson, A.V. Bulgakov, W. Marine and M. Sentis 349

Atomic structures of Ag/Ge(1 1 1) $\sqrt{39} \times \sqrt{39}$ and 6 × 6 surfaces studied by STM: observations of bias dependent reconstruction transformations
H.M. Zhang and R.I.G. Uhrberg 353

Temperature dependence of ordered cobalt nanodots growth on Au(7 8 8)
G. Baudot, S. Rohart, V. Repain, H. Ellmer, Y. Girard and S. Rousset 360

The role of microstructure in nanocrystalline conformal $Co_{0.9}W_{0.02}P_{0.08}$ diffusion barriers for copper metallization
A. Kohn, M. Eizenberg and Y. Shacham-Diamand 367

A structural analysis of Bi/Si(1 0 0) 2 × *n* surfaces by ICISS
N. Oishi, N. Saitoh, M. Naitoh, S. Nishigaki, F. Shoji, S. Nakanishi and K. Umezawa 373

SiC nanofibers grown by high power microwave plasma chemical vapor deposition
S.-i. Honda, Y.-G. Baek, T. Ikuno, H. Kohara, M. Katayama, K. Oura and T. Hirao 378

Surface morphology and field emission characteristics of carbon nanofiber films grown by chemical vapor deposition on alloy catalyst
K. Kamada, T. Ikuno, S. Takahashi, T. Oyama, T. Yamamoto, M. Kamizono, S. Ohkura, S. Honda, M. Katayama, T. Hirao and K. Oura 383

Silicon nitride deposited by ECR–CVD at room temperature for LOCOS isolation technology
M.A. Pereira, J.A. Diniz, I. Doi and J.W. Swart 388

Highly aligned carbon nanotube arrays fabricated by bias sputtering
N. Hayashi, S.-i. Honda, K. Tsuji, K.-Y. Lee, T. Ikuno, K. Fujimoto, S. Ohkura, M. Katayama, K. Oura and T. Hirao 393

Presumption and improvement for gallium oxide thin film of high temperature oxygen sensors
M. Ogita, S. Yuasa, K. Kobayashi, Y. Yamada, Y. Nakanishi and Y. Hatanaka 397

Transparent ellipsometric memory with thin film multilayer structures. Optical memory based on the ellipsometric principle
M. Tazawa, G. Xu and P. Jin 402

Si–LiG process for inductive meso systems
P.R. Barbaroto, I. Doi and L.O.S. Ferreira 406

Micro-patterning of self-supporting layers with conducting polymer wires for 3D-chip interconnection applications
J. Ackermann, C. Videlot, T.N. Nguyen, L. Wang, P.M. Sarro, D. Crawley, K. Nikolić and M. Forshaw 411

IV. Organic Monolayers and Films

Perylenes and phthalocyanines on GaAs(0 0 1) surfaces
D.A. Evans, H.J. Steiner, A.R. Vearey-Roberts, V. Dhanak, G. Cabailh, S. O'Brien, I.T. McGovern, W. Braun, T.U. Kampen, S. Park and D.R.T. Zahn 417

Transport gap of organic semiconductors in organic modified Schottky contacts
D.R.T. Zahn, T.U. Kampen and H. Méndez 423

Time-resolved photoluminescence study of excitons in thin PTCDA films at various temperatures
A.Yu. Kobitski, R. Scholz, G. Salvan, T.U. Kampen, H.P. Wagner and D.R.T. Zahn 428

Influence of substrate surfaces on the growth of organic films
A. Das, G. Salvan, T.U. Kampen, W. Hoyer and D.R.T. Zahn 433

Electronic structures of unoccupied states in lithium phthalocyanine thin films of different polymorphs studied by IPES
N. Sato, H. Yoshida, K. Tsutsumi, M. Sumimoto, H. Fujimoto and S. Sakaki 438

IRRAS and LEED studies of films of the long chain *n*-alkane *n*-$C_{44}H_{90}$ on Cu(1 0 0) and Cu(1 1 0)
Y. Hosoi, Y. Niwa, Y. Sakurai, H. Ishii, Y. Ouchi and K. Seki 441

Direct comparison of the electronic coupling efficiency of sulfur and selenium alligator clips for molecules adsorbed onto gold electrodes
L. Patrone, S. Palacin and J.P. Bourgoin 446

Effect of the solvent on the formation of *n*-dodecanethiol films on a polycrystalline $Ag_{90}Ni_{10}$ substrate
F. Laffineur, N. Couturier, J. Delhalle and Z. Mekhalif 452

A discussion of conduction in organic light-emitting diodes
T. Mori, T. Ogawa, D.-C. Cho and T. Mizutani 458

Self-assembly of (3-mercaptopropyl)trimethoxysilane on polycrystalline zinc substrates towards corrosion protection
F. Sinapi, L. Forget, J. Delhalle and Z. Mekhalif 464

Electropolymerisation of poly(3,4-ethylene-dioxythiophene) on nickel substrates
Z. Mekhalif, F. Plumier and J. Delhalle 472

Scanning tunneling microscopy of locally derivatized self-assembled organic monolayers
N. Battaglini, H. Klein, Ph. Dumas, C. Moustrou and A. Samat 481

Pseudogap structure in icosahedral ZnMgY and ZnMgHo quasicrystals
A. Suchodolskis, W. Assmus, B. Čechavičius, J. Dalmas, L. Giovanelli, M. Göthelid, U.O. Karlsson, V. Karpus, G. Le Lay, R. Sterzel and E. Uhrig 485

Investigation of gas–surface interactions at self-assembled silicon surfaces acting as gas sensors
D. Narducci, P. Bernardinello and M. Oldani 491

Photoconductivity and oxygen adsorption of Cu-phthalocyanine thin films on cadmium sulphide surfaces
A.S. Komolov and P.J. Møller 497

Orientation of perylene derivatives on semiconductor surfaces
T.U. Kampen, G. Salvan, A. Paraian, C. Himcinschi, A.Yu. Kobitski, M. Friedrich and D.R.T. Zahn 501

Reactions of iodobenzene on Pd(1 1 1) and Pd(1 1 0)
H. von Schenck, J. Weissenrieder, S. Helldén, B. Åkermark and M. Göthelid 508

Low-energy molecular exciton in indium/perylene-3,4,9,10-tetracarboxylic dianhydride system observed by electronic energy loss spectroscopy
T. Nakamura, K. Iwasawa, S. Kera, Y. Azuma, K.K. Okudaira and N. Ueno 515

Raman analysis of first monolayers of PTCDA on Ag(1 1 1)
V. Wagner, T. Muck, J. Geurts, M. Schneider and E. Umbach 520

XPS study of irradiation damage and different metal–sulfur bonds in dodecanethiol monolayers on gold and platinum surfaces
T. Laiho, J.A. Leiro and J. Lukkari 525

Comparative study of the monolayers of CH_3–$(CH_2)_n$–$SiCl_3$ and CH_3–$(CH_2)_n$–$PO(OH)_2$, n = 4 and 13, adsorbed on polycrystalline titanium substrates
G. Philippin, J. Delhalle and Z. Mekhalif 530

Scanning tunneling microscopy study of pentacene adsorption on Ag/Si(1 1 1)-($\sqrt{3} \times \sqrt{3}$)R30°
Ph. Guaino, D. Carty, G. Hughes, P. Moriarty and A.A. Cafolla 537

Peculiar features in the electrical characteristics of CuPc based diodes
G. Pham, T.U. Kampen, I. Thurzo, M. Friedrich and D.R.T. Zahn 542

V. Oxidation Passivation, Oxides and High-K Films and Surfaces

Chemical and electronic structure of SiO_2/Si interfacial transition layer
T. Hattori, K. Takahashi, M.B. Seman, H. Nohira, K. Hirose, N. Kamakura, Y. Takata, S. Shin and K. Kobayashi 547

Characterization by ion beams of surfaces and interfaces of alternative materials for future microelectronic devices
C. Krug, F.C. Stedile, C. Radtke, E.B.O. da Rosa, J. Morais, F.L. Freire Jr. and I.J.R. Baumvol 556

Electronic structure of transition metal high-*k* dielectrics: interfacial band offset energies for microelectronic devices
G. Lucovsky, G.B. Rayner Jr., Y. Zhang, C.C. Fulton, R.J. Nemanich, G. Appel, H. Ade and J.L. Whitten 563

Thermal growth of SiO_2 on SiC investigated by isotopic tracing and subnanometric depth profiling
C. Radtke, I.J.R. Baumvol, F.C. Stedile, I.C. Vickridge, I. Trimaille, J.-J. Ganem and S. Rigo 570

In situ observation of oxygen-induced anisotropic surface etching processes at 6H-SiC(0 0 0 1) by variable temperature scanning tunneling microscope
H. Okado, O. Kubo, N. Yamaoka, S. Itou, M. Katayama and K. Oura 575

A metastable-induced electron spectroscopy study on the process of oxygen adsorption at a Ni(1 1 0) surface
T. Ikari, T. Kojima, K. Yamada, M. Naitoh and S. Nishigaki 579

Photoluminescence properties of Tb^{3+} and Eu^{3+} ions hosted in TiO_2 matrix
A. Conde-Gallardo, M. García-Rocha, R. Palomino-Merino, M.P. Velásquez-Quesada and I. Hernández-Calderón 583

Interaction between oxygen and InAs(1 1 1) surfaces, influence of the electron accumulation layer
K. Szamota Leandersson, M. Göthelid, O. Tjernberg and U.O. Karlsson 589

Morphology changes of Si(0 0 1) surfaces during wet chemical halogenation
L. Pedemonte, G. Bracco, A. Relini, R. Rolandi and D. Narducci 595

First stages of the InP(1 0 0) surfaces nitridation studied by AES, EELS and EPES
M. Petit, Y. Ould-Metidji, Ch. Robert, L. Bideux, B. Gruzza and V. Matolin 601

Electrical characterization of charges in irradiated oxides by electrostatic force microscopy and Kelvin method
H. Dongmo, J.F. Carlotti, G. Bruguier, C. Guasch, J. Bonnet and J. Gasiot 607

Nitridation of GaAs(1 0 0) substrates and Ga/GaAs systems studied by XPS spectroscopy
Y. Ould-Metidji, L. Bideux, D. Baca, B. Gruzza and V. Matolin 614

Generation of ammonia plasma using a helical antenna and nitridation of GaAs surface
K. Yasui, T. Arayama, S. Okutani and T. Akahane 619

Initial oxynitridation of a Si(1 0 0) 2 × 1 surface by the annealing and low energy nitrogen ion exposure
K.-J. Kim, K. Ihm, C. Jeon, C.-C. Hwang, T.-H. Kang and B. Kim 625

Direct image observation of the initial forming of passive thin film on stainless steel surface by PEEM
T.-H. Kang, K. Ihm, C.-C. Hwang, C. Jeon, K.-j. Kim, J.-Y. Kim, M.-K. Lee, H.-J. Shin, B. Kim, S. Chung and C.-Y. Park 630

The influence of fluoride anions on the silicon carbide surface oxidation in aqueous solutions
R.P. Socha and J. Väyrynen 636

Oxide formation and passivation for micro- and nano-electronic devices
C. Bae and G. Lucovsky 644

On the re-oxidation of silicon(0 0 1) surfaces modified by self-assembled monolayers
D. Narducci, L. Pedemonte and G. Bracco 649

VI. Metals, Semiconductors and Oxides Surfaces, Interfaces and Thin Films

Optical properties of polycrystalline and epitaxial anatase and rutile TiO_2 thin films by rf magnetron sputtering
S. Tanemura, L. Miao, P. Jin, K. Kaneko, A. Terai and N. Nabatova-Gabain 654

Structural characterization of TiO_2/TiN_xO_y (δ-doping) heterostructures on (1 1 0)TiO_2 substrates
T. Chiaramonte, L.P. Cardoso, R.V. Gelamo, F. Fabreguette, M. Sacilotti, M.C. Marco de Lucas, L. Imhoff, S. Bourgeois, Y. Kihn and M.-J. Casanove 661

EPES applied to the study of gold/alumina interfaces
B. Gruzza, C. Robert and L. Bideux 667

Physico-chemistry and morphology of silicon surface during the first stage of alumina deposition
P. Jonnard, J. Desmaison, H. Hidalgo, F. Rossignol, C. Tixier and P. Tristant 674

Contact resistivity between tungsten and impurity (P and B)-doped $Si_{1-x-y}Ge_xC_y$ epitaxial layer
J. Noh, M. Sakuraba, J. Murota, S. Zaima and Y. Yasuda 679

W delta doping in Si(1 0 0) using ultraclean low-pressure CVD
T. Kanaya, M. Sakuraba and J. Murota 684

Spectroscopic studies of TM/Si and TM/SiO_2 interfaces
I. Jarrige, P. Jonnard, P. Holliger and T.P. Nguyen 689

Electron induced epitaxy of cubic ZnS on GaAs(1 0 0) surfaces
G. Shimaoka, T. Arakawa and Y. Suzuki 694

Metal induced gap states at LiCl–Cu(0 0 1) interface studied by X-ray absorption fine structure
M. Kiguchi, M. Katayama, G. Yoshikawa, K. Saiki and A. Koma 701

Dynamics of c(4 × 2) phase-transition in Si(1 0 0) surfaces
A. Natori, M. Osanai, J. Nakamura and H. Yasunaga 705

c(4 × 8) periodicity in ultrathin iron silicides on Si(1 1 1)
G. Garreau, S. Hajjar, S. Pelletier, M. Imhoff and C. Pirri 711

Kinetics study of antimony adsorption on Si(1 1 1)
L. Lapena, P. Müller, G. Quentel, H. Guesmi and G. Tréglia 715

Structural stability of the Ge/Si(1 1 3)-2 × 2 surface
J. Nakamura, Z. Zhang, K. Sumitomo, H. Omi, T. Ogino and A. Natori 724

Si *c*(4 × 4) structure appeared in the initial stage of 3C-SiC epitaxial growth on Si(0 0 1) using monomethylsilane and dimethylsilane
Y. Narita, T. Inubushi, K. Yasui and T. Akahane 730

VII. Thin Films, Device Technology, Advanced Characterization Techniques and Microfabrication

An investigation of sidewall adhesion in MEMS
W. Robert Ashurst, M.P. de Boer, C. Carraro and R. Maboudian 735

Strain effects in device processing of silicon-on-insulator materials
J. Camassel and A. Tiberj 742

Model for defect generation at the (1 0 0)Si/SiO_2 interface during electron injection in MOS structures
M. Houssa, J.L. Autran, M.M. Heyns and A. Stesmans 749

Electron capture kinetics at AlF_3/SiO_2 interfaces
I. Thurzo, T.U. Kampen, D.R.T. Zahn and D. König 753

Formation of silicon nano-dots in luminescent silicon nitride
Z. Pei and H.L. Hwang 760

An innovative a-Si:H p-i-n based X-ray medical image detector for low dosage and long exposure applications
S.-S. Fann, Y.-L. Jiang and H.-L. Hwang 765

Chemical analysis and optical properties of metallic nanoclusters
A. Downes and P. Dumas 770

Formation and characterization of TiO_2 thin films with application to a multifunctional heat mirror
P. Jin, L. Miao, S. Tanemura, G. Xu, M. Tazawa and K. Yoshimura 775

Surface-induced broadening and shift of exciton resonances in the thin film regime
N. Atenco-Analco, F. Pérez-Rodríguez and N.M. Makarov 782

Auger electron spectroscopy determination of surface self-diffusion coefficients from growth of voids in thin deposited films
I. Beszeda, I.A. Szabó and E.G. Gontier-Moya 787

Electropolymerized poly-4-vinylpyridine for removal of copper from wastewater
P. Viel, S. Palacin, F. Descours, C. Bureau, F. Le Derf, J. Lyskawa and M. Sallé 792

Probing a molecular electronic transition by two-colour sum-frequency generation spectroscopy
C. Humbert, L. Dreesen, S. Nihonyanagi, T. Masuda, T. Kondo, A.A. Mani, K. Uosaki, P.A. Thiry and A. Peremans 797

SIMS characterization of hydrogen transport through SiO_2 by low-temperature hydrogen annealing
Y. Kawashima, Z. Liu, K. Terashima, K. Hamada, K. Fukutani, M. Wilde, S. Aoyagi and M. Kudo 804

New technique to characterise thin oxide films under electronic irradiation
J. Liébault, K. Zarbout, D. Moya-Siesse, J. Bernardini and G. Moya 809

Dependence of structural and luminescent characteristics of Y_2O_3:Er thin film phosphors on substrate
Y. Nakanishi, K. Kimura, H. Kominami, H. Nakajima, Y. Hatanaka and G. Shimaoka 815

VIII. New Theoretical Approaches of Films and Surfaces

Quantum structures in SiC
F. Bechstedt, A. Fissel, J. Furthmüller, U. Kaiser, H.-Ch. Weissker and W. Wesch 820

Role of interface suboxide Si atoms on the electronic properties of Si/SiO_2 superlattices
P. Carrier, Z.-H. Lu, L.J. Lewis and M.W.C. Dharma-wardana 826

Transport properties of magnetic atom bridges controlled by a scanning tunneling microscope
H. Nakanishi, T. Kishi, H. Kasai, F. Komori and A. Okiji 829

Segregation in ternary alloys: an interplay of driving forces
J. Luyten, S. Helfensteyn and C. Creemers 833

Contributions to the infrared effective charges of oxides and chalcogenides from equilibrium charge and dynamic charge redistribution during normal mode motions
L.S. Sremaniak, J.L. Whitten, M. Menon and G. Lucovsky 839

Modelling surface phenomena in PdNi alloys
S. Helfensteyn, J. Luyten, L. Feyaerts and C. Creemers 844

Surface properties of chalcogen passivated GaAs(1 0 0)
T.U. Kampen, D.R.T. Zahn, W. Braun, C. González, I. Benito, J. Ortega, L. Jurczyszyn, J.M. Blanco, R. Pérez and F. Flores 850

Surface-state mediated three-adsorbate interaction: exact and numerical results and simple asymptotic expression
P. Hyldgaard and T.L. Einstein 856

Chalcogen passivation of GaAs(1 0 0) surfaces: theoretical study
B. Szűcs, Z. Hajnal, Th. Frauenheim, C. González, J. Ortega, R. Pérez and F. Flores 861

Relation between surface stress and (1×2) reconstruction for (1 1 0) fcc transition metal surfaces
S. Olivier, A. Saúl and G. Tréglia 866

IX. Wide Band Gap Semiconductor (SiC, Diamond, Nitrides) Surface and Interfaces

Epitaxial growth of the pseudo-binary wide band gap semiconductor SiCAlN
R. Roucka, J. Tolle, A.V.G. Chizmeshya, P.A. Crozier, C.D. Poweleit, D.J. Smith, J. Kouvetakis and I.S.T. Tsong 872

Thermally induced changes in cluster-assembled carbon nanocluster films observed via photoelectron spectroscopy
E. Magnano, C. Cepek, M. Sancrotti, F. Siviero, S. Vinati, C. Lenardi, E. Barborini, P. Piseri and P. Milani 879

Cathodoluminescence in-depth spectroscopy study of AlGaN/GaN heterostructures
F. Ishikawa and H. Hasegawa 885

Allowed combinations and overtones of vibrational modes in wurtzite GaN
H.W. Kunert 890

Influence of intermediate-temperature buffer layer on flicker noise characteristics of MBE-grown GaN thin films and devices
B.H. Leung, W.K. Fong and C. Surya 897

Surface and overgrowth analysis of the II–VI compound BeTe
V. Wagner, J. Wagner, L. Hansen, S. Gundel, G. Schmidt and J. Geurts 901

Ohmic contact to p-type GaN using a novel Ni/Cu scheme
S.H. Liu, J.M. Hwang, Z.H. Hwang, W.H. Hung and H.L. Hwang 907

Comparison of classical and BEN nucleation studied on thinned Si (1 1 1) samples: a HRTEM study
J.C. Arnault, S. Pecoraro, F. Le Normand and J. Werckmann 912

3C-SiC thin epilayer formation at low temperature using ion beams
N. Tsubouchi, A. Chayahara, Y. Mokuno, A. Kinomura and Y. Horino 920

Author Index I

Subject Index XIV